MINUTES OF SDO SPLINTER GROUP MEETING
11-MAY-2000
Bldg 8 auditorium, GSFC

Barbara Thompson's introduction:
* This meeting is here primarily to ensure that community voices are heard. This is sort-of a democracy, and we want to distinguish between vocal minorities and the actual group consensus. If you have something to say about SDO, get in touch with her. Email is barbara.thompson@gsfc.nasa.gov

Alan Title's introduction:
*SDO isn't really undefined or unexposed as yet.
* NSF Decadal Survey: AST & SDO are in the top 25% of priorities
* History: Hale - Sonar - SDO
* There is an 80 pp. report on LWS home page.
* Mission definitions are optimized for imaging-type monitoring and helioseismology.

Purpose of SDO:

* Look at magnetic field under, at, and above the surface on a timescale consistent with modern technology.
* Measure velocity field at surface (for helioseismology; requires very stable platform; continuous data collection).
* Measure vector magnetic field at surface.
* Observe UV & EUV corona from several kK through 3 MK.
* Observe visible corona close to limb to achieve continuity between UV and visible measurements.
* Operate at high cadence (to see the core of interesting events).

Overview of the solution as adopted by the earlier working group:

* 12 instruments, each of which has 4096x4096 detector, which has a typical cadence of ~ 10 seconds (all simultaneously).
* Observing scenario: continuous operation with few or no switchable parameters
* Data rate: 120 Mbps; this requires continuous contact
* Geosynchronous (NOT geostationary) orbit with single ground station (additional downlink groundstations possible).
* Analysis: data mining -- "observe" in the database, much as do users of the Sloan DSS data.

(More information on SDO strawman is on the LWS web site.)

Some types of observation that are not in the existing strawman payload are necessary for the stated goals of the program. Several kinds of observation were mentioned.

* Near-surface chromospheric & coronal spectroheliograms to resolve motion and temperature changes in time and space)
* Full Disk Irradiance measurements (spectrally resolved) (for climatology and planetary work as well as solar astrophys.)
* Heliospheric Radio measurements (kilometer-wave) (to identify and track CMEs as they begin and propagate)
* V. high resolution imaging measurements (track individual flux tubes)
* Infrared coronagraphy

Community programmatic concerns:

* How will the community response be integrated with the existing SDO plans? Will there be written forms and feedback? (Much is said and anticipated; little is yet arranged)
* If the data are to be used for operational geoeffectiveness studies, it will take thought and integration with NOAA/SEC right from the start.
* There needs to something like a coherent SDT for the entire LWS complement as well as for each individual mission.
* If there are things which can't be placed on SDO, we need to raise them up as unaddressed priorities to help people who propose them for other missions.
* Some people were worried that SDO might crowd out other opportunities in solar physics (making it harder to do science that's not included in the SDO complement). This appears not to be the case -- (LWS is in addition to the SEC program...)

Summary

* SDO is a _part_ of a larger program, not a complete program-in-a-box.
* SDO's design may not be set in concrete, but some considerable thought has gone into it -- it's certainly set in cold molasses.
* The existing study is a "preformulation" study: next comes more community input and then selection of an SDT.
* Not all interesting instruments can fit on SDO or are appropriate for its mission. Some of those instruments are required to achieve the LWS goals, and should be advocated for other platforms.
* The mission has been advancing very, very fast because of the great rate at which LWS funding appeared. This makes the community nervous.
* Written input: Mail to Thompson.